

Report on some little known butterflies from SE Tibet and NW Yunnan

(Lepidoptera: Lycaenidae, Nymphalidae et Hesperidae)

by

HAO HUANG & ZHEN-JUN WU

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Abstract: Some little known butterflies are reported from Motuo, SE Tibet and Gongshan, NW Yunnan, with ♂ genitalia illustrated, including *Spindasis lohita himalayanus* (MOORE, 1884), *Celaenorrhinus badia* (HEWITSON, 1877), *Ochlodes crataeis* (LEECH, 1894), *Lethe sura* (DOUBLEDAY, 1849), *Mycalesis mestra mestra* HEWITSON, 1862 and *Penthesma lisarda lisarda* (DOUBLEDAY, 1845). *Coladenia motuoa* HUANG & LI, 2006 **stat. nov.** (= *Coladenia uemurai motuoa* HUANG & LI, 2006) is rediscovered on an additional ♂ specimen and raised to full specific rank.

Introduction: The junior author managed to collect butterflies at Motuo, SE Tibet in August 2014, May 2015 and August 2015, and found some very little known species. The most interesting part of his collection is reported herein. The selected references cited under the taxa discussed below are restricted to the original descriptions, the reliable records for Chinese fauna and the works with diagnostic discussions or illustrations.

Abbreviations:

CHH: Collection of HAO HUANG.

CWZJ: Collection of ZHEN-JUN WU.

HT: Holotype.

TL: Type locality.

Lycaenidae

Spindasis lohita himalayanus (MOORE, 1884) (figs. 1-2, 20)

Aphnaeus lohita himalayanus MOORE, 1884, J. Asiatic Soc. Bengal, Pt. II 53(1): 26; TL: Nepal, India (Sikkim, Darjeeling).

Aphnaeus lohita: EVANS, 1915: 21, record from Lower Tsang Po (Motuo area).

Spindasis lohita himalayanus: EVANS, 1925: 760, key to Indian taxa; CANTLIE, 1963: 465, figs. 5-7 for ♂ genitalia; HUANG, 2001: 101, record from Chayu area, SE Tibet; WEIDENHOFFER & BOZANO, 2007: 38-39, keys, 43, specimens from Khasi Hills, India and Sichuan.

Material: SE Tibet: 1 ♂ (CWZJ), Linzhi Division, Motuo County, Beibeng, 850 m, 10.VIII.2014, Z.-J. WU leg..

Remarks: This species was recorded by EVANS (1915) from Motuo area, however was not encountered by the senior author (HUANG, 2000).

Hesperidae

Coladenia motuoa HUANG & LI, 2006 **stat. nov.** (figs. 3-4, 17-18)

Coladenia uemurai motuoa HUANG & LI, 2006, Atalanta 37 (3/4): 322, figs. 1-2 for ♂ genitalia, cpl. 12, fig. A for ♂ HT; TL: Motuo, SE Tibet.

Material: SE Tibet: 1 ♂ (CWZJ), Linzhi Division, Motuo County, on path from Hanmi to Aniqiao, 1600 m, 10.VIII.2015, Z.-J. WU leg.; 1 ♂ (HT, CHH), 1 ♀ (PT, CHH), Motuo, on path from Hanmi to Aniqiao, ca 1800 m, 10.VIII.2006, H. HUANG leg.

Remarks: The dissection of the newly collected ♂ proves that the genital difference in length of dorsal process of the harpe, between *Coladenia motuoa* HUANG & LI, 2006 **stat. nov.** and *Coladenia uemurai* HUANG, 2003, is constant. In addition, the following genital differences are also noticed: 1) tegumen in lateral view is longer in *C. uemurai* HUANG than in *C. motuoa* HUANG & LI; 2) tip of uncus in lateral view is more robust and blunt in *C. motuoa* HUANG & LI than in *C. uemurai* HUANG; 3) base of the non-pigmented split between ampulla and harpe is remoter from distal margin of harpe in *C. motuoa* HUANG & LI than in *C. uemurai* HUANG; 4) aedoeagus in lateral view with ventral margin in opposite of carina aedoeagi more or less convex in *C. uemurai* HUANG, but is concaved in *C. motuoa* HUANG & LI; 5) coecum of aedoeagus more curved upwards in *C. uemurai* HUANG than in *C. motuoa* HUANG & LI.

The external difference between the two species seems to be confined to the shape of discocellular white spot of forewing, which is acutely pointed at inner posterior corner in *C. uemurai* HUANG but is obtuse or rounded at this corner in *C. motuoa* HUANG & LI.

Celaenorrhinus badia (HEWITSON, 1877) (figs. 7-8, 19)

Pterygospidea badia HEWITSON, 1877, Mag. Nat. Hist. (4) 20: 322; TL: Sikkim.

Celaenorrhinus badia: SOUTH, 1913: 611, uncertain record of a ♀ from Tulang, Mishimi Hills; EVANS, 1949: 103, pl.17, fig. B6-24 for ♂ genitalia.

Material: SE Tibet: 1 ♂ (CWZJ), Linzhi Division, Motuo County, on path from Beibeng to Maniweng, 1100 m, 11.VIII.2014, Z.-J. WU leg.

Remarks: The identification of the ♂ from Tibet is based upon the examination of its genitalia, which shows no difference from the figure in EVANS (1949). SOUTH (1913) recorded a ♀ from Tulang, Mishimi hills (one of the disputed areas between China and India, currently under control of India) with a little doubt about his identification. This is the first reliable record of this species for the Chinese fauna.

Ochlodes crataeis (LEECH, 1894) (figs. 5-6, 21)

Augiades crataeis LEECH, 1894, Butterflies from China, Japan and Corea: 603, pl. 41, figs. 9, 11; TL: Omei, Sichuan. *Ochlodes crataeis*, EVANS, 1949: 355, pl. 44, fig. K3-8; TONG, 1993: 73, figs. 722-724; CHIBA & TSUKIYAMA, 1996: 8, pl. 2, figs. 18-20 for ♂♂ from Omei, Sichuan and Taunggy, S. Shan States, Burma, pl. 3, fig. 7 for ♀ from Omei, pl. 4, fig. 18 for ♂ genitalia; WANG, NIU & CHEN, 1998: 196, records from Henan, fig. 11-23 for ♂ genitalia, cpl. 86, figs. 7-10.

Material: NW Yunnan: 1 ♂ (CWZJ), Nujiang Prefecture, Gongshan County, Bingzhongluo, Nidadang, 31.VII.2015, Z.-J. WU leg.. Sichuan: 3 ♂♂, 2 ♀♀ (CHH), Omeishan, VIII.2011 & 2012, H. HUANG leg.; 1 ♂ (CHH), Ganzi Prefecture, Luding County, VII.2011, H. HUANG leg.; 1 ♂ (CHH), Tianquan County, Erlangshan, VII.2011, H. HUANG leg. Chongqing: 1 ♂ (CHH), Simianshan, VII.2010, J.-Y. QIU leg.. Zhejiang: 2 ♂♂ (CHH), Lin'an, West Tianmushan, VII.2007, H. HUANG leg.

Remarks: The ♂ collected by the junior author from Gongshan (figs. 5-6, 21) is the first record of this species from Yunnan Province of China. It is more similar to the 2 ♂♂ from Burma figured by CHIBA & TSUKIYAMA (1996) in having the two cell spots of forewing more conjoined and the spot in space 2 of forewing wider than those of the specimens from Sichuan, Chongqing and Zhejiang.

Nymphalidae

Lethe sura (DOUBLEDAY, 1849) (figs. 9-10, 22)

Zophoessa sura DOUBLEDAY 1849, Genera diurnal Lep.: 362, pl. 61, fig. 1, TL: Sylhet, India.

Lethe sura: EVANS, 1915: 20, record from Lower Tsang Po (Motuo area); D'ABRERA, 1985: 412, fig. for ♀ HT; LANG, 2014: 172, discussion on Chinese records, fig. 11 for ♂ genitalia taken from specimen from N Vietnam.

Material: SE Tibet: 1 ♂ (CWZJ), Linzhi Division, Motuo County, on path from Hanmi to Aniqiao, 1600 m, 19.V.2015, Z.-J. WU leg.

Remarks: *Lethe sura* (DOUBLEDAY) was reported by EVANS (1915) from the Lower Tsangpo (Motuo area) on a single ♂, which represents the first record for Chinese fauna. It was not encountered by the senior author at Motuo area in summer (HUANG, 2000), but 1 ♂ was found by the junior author in May, 2015. It seems to be restricted to SE Tibet and the border region of Yunnan, adjacent to Myanmar, Vietnam and Laos. Another ♂ was recently collected from Tengchong area, W Yunnan (Y.-K. LUO, pers. comm.). According to LANG (2014), TALBOT'S (1947) record of this species from W. China was a misidentification of *L. yuemingae* LANG, 2014; and CHOU et al. (1994) figured specimens taken from D'ABRERA (1985) where 1 ♂ is figured from Tibet, without naming the locality.

Lethe sura (DOUBLEDAY) was originally described on a single ♀ from Sylhet, NE India; this ♀ HT was figured in D'ABRERA'S (1985) book. The major taxonomic problem might be the possible confusion with the very similar *L. dura* (MARSHALL, 1882) in identification. According to MOORE (1892: 291-293) and EVANS (1923: 532-533), *L. sura* (DOUBLEDAY) is externally separable from *L. dura* (MARSHALL) by having the outer margin of ♂ brand on forewing upperside zigzag, not flat as in the latter, and the dark antediscal band in spaces 4-6 on hindwing underside rather straight, not curved as in the latter. S.-Y. LANG (pers. comm.) noticed that *L. sura* (DOUBLEDAY) differs from *L. dura* (MARSHALL) also by having a small pale patch above vein 4 just inside of the dark discal band on hindwing underside pointed outwards along vein 4. In ♂ genitalia, *L. sura* (DOUBLEDAY) is separable from *L. dura* (MARSHALL) by having distal half of uncus in lateral view rather triangular with a straight dorsal margin (fig. 22; LANG, 2014: 174, fig. 11). The ♂ genitalia figured by DE LESSE (1956: fig. 5), probably belongs to *L. dura* (MARSHALL), possessing a curved dorsal margin at distal half of uncus. D'ABRERA (1985: 412) noted some ecological difference between the two species that *L. sura* (DOUBLEDAY) is not known to occur below 6000 feet. In Motuo area, SE Tibet, *L. sura* (DOUBLEDAY) is encountered in May and early June whilst *L. dura* (MARSHALL) is found in July and early August. Two ♂♂ of *L. dura* (MARSHALL) collected by X.-D. YANG from Motuo were examined by the senior author.

Mycalesis mestra HEWITSON, 1862 (figs. 9-10, 22)

Mag. Nat. Hist. (4) 20: 1862:79, pl. 1, fig. 2; TL: Assam; EVANS, 1915: 20, record from Lower Tsang Po (Motuo); EVANS, 1921: 361, key to species, pl. 3, figs. for ♂ genitalia; LEE, 1982: 139, record from Chayu, SE Tibet.

Material: SE Tibet: 1 ♂ (CWZJ), Linzhi Division, Motuo County, on path from Hanmi to Aniqiao, 1600 m, 19.V.2015, Z.-J. WU leg.

Remarks: This species was not encountered by the senior author (HUANG, 2000). One ♂ collected by the junior author possesses a valva (fig. 23) similar to that of the specimen collected from Sikkim figured by EVANS (1921: pl. 3).

Penthema lisarda lisarda (DOUBLEDAY, 1845) (figs. 13-14, 24)

Diadema lisarda DOUBLEDAY, 1845, Genera diurnal Lep.: 233.

Penthema lisarda, MOORE, 1899-1900: 151, pl. 333.

Penthema lisarda lisarda, EVANS, 1924: 900, key to species and subspecies, pl. 21, fig.F.15.1 for ♂.

Penthema darlisa, SHIZUYA et al., 2005: 30, record from Kawlee, Kachin, Myanmar, 34, fig. for ♂. Misidentification.

Material: SE Tibet: 1 ♂ (CWZJ), Linzhi Division, Motuo County, 200 m above Aniqiao, 1200 m, 19.V.2015, Z.-J. WU leg.

Remarks: This is the first record of this subspecies for Chinese fauna.

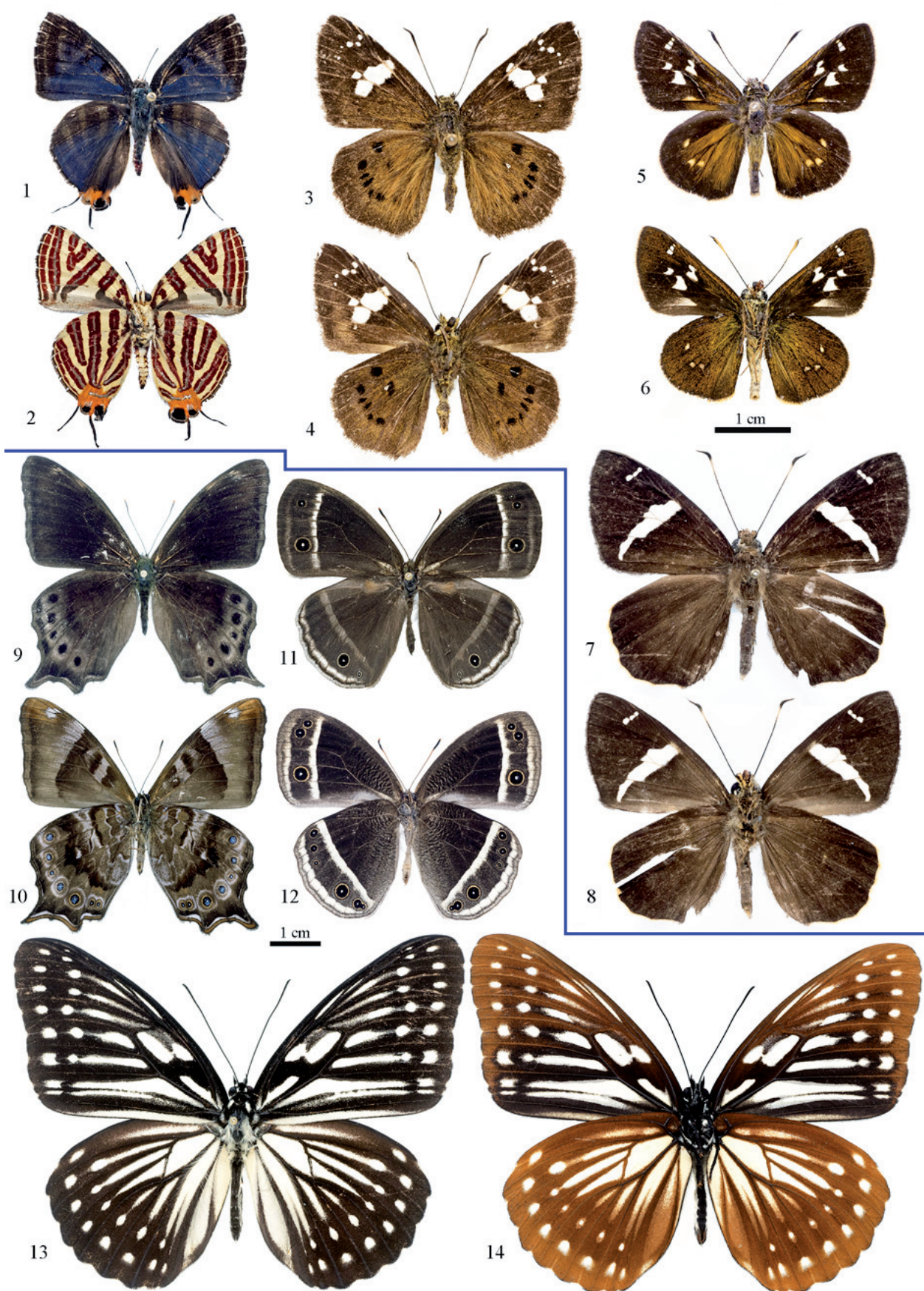
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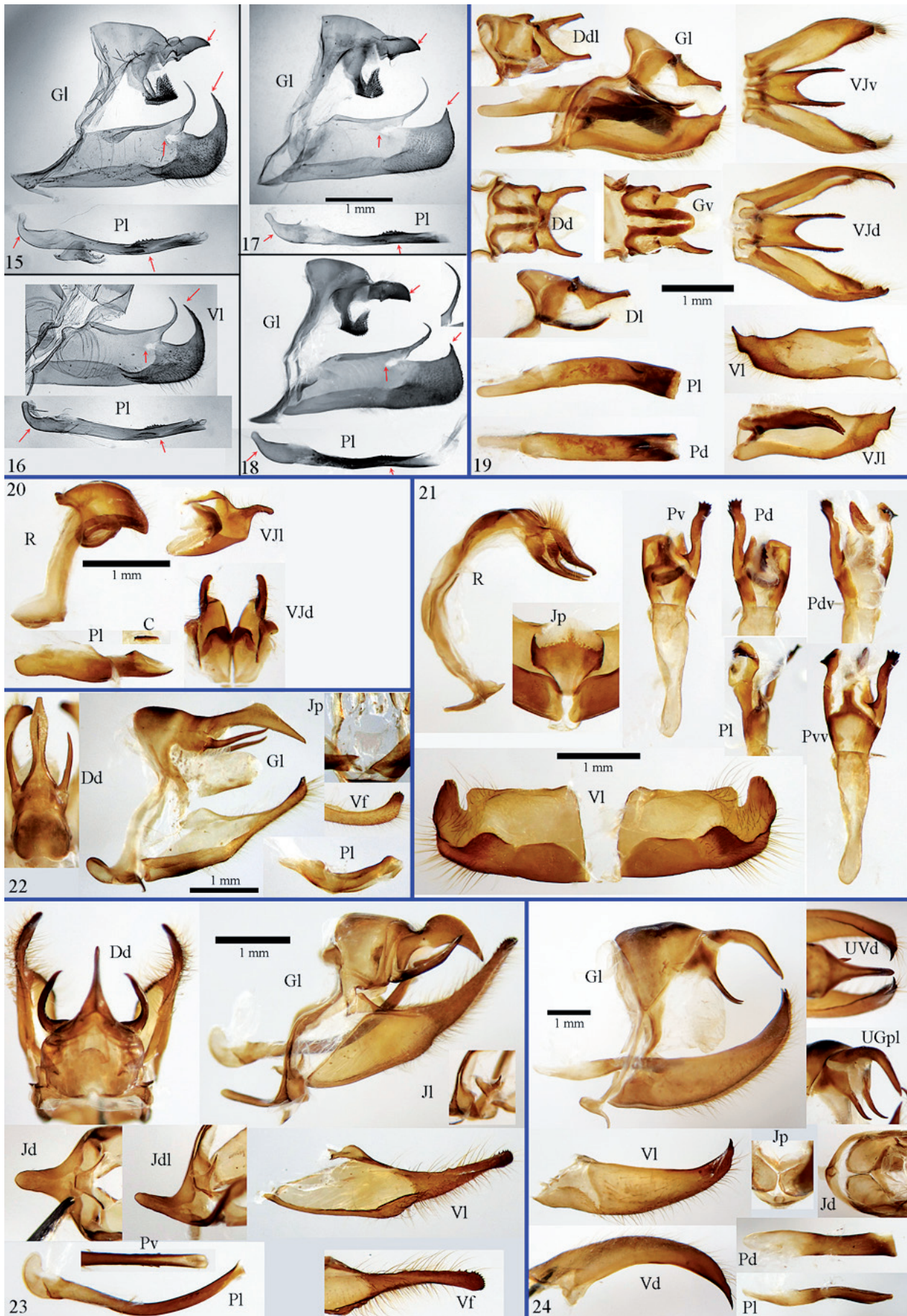
Addresses of the authors

HAO HUANG
503, East, #1 Dong-ting-hu Road
Qingdao, P.R. China
Email: cmdhhxx@hotmail.com

ZHEN-JUN WU
Fujian branch, China telecom limited,
7#, Dongjie Road, Gulou
Fuzhou, P.R. China
Email: 18906916587@189.cn



Figs. 1-14: Habitus under two scales (1-8 at the one scale, 9-14 at another scale). (1-2) *Spindasis lohita himalayanus* (MOORE, 1884); (3-4) *Coladenia motuoa* HUANG & LI, 2006; (5-6) *Ochlodes crataeis* (LEECH, 1894); (7-8) *Celaenorhinus badia* (HEWITSON, 1877); (9-10) *Lethe sura* (DOUBLEDAY, 1849); (11-12) *Mycalesis mestra* HEWITSON, 1862; (13-14) *Penthema lisarda lisarda* (DOUBLEDAY, 1845).



Figs. 15-24: ♂ genitalia under different scales. (15-16) *Coladenia uemurai uemurai* HUANG 2003, HT and pratype; (17-18) HT; (18) specimen shown in figs. 3-4; (19) *Cetaenorrhinus badia* (HEWITSON, 1877), figs. 7-8; (20) *Spindasis lohita himalayanus* (MOORE, 1884), figs. 1-2; (21) *Ochloides crataeais* (LEECH, 1894), figs. 5-6; (22) *Lethe sura* (DOUBLEDAY, 1849), figs. 9-10; (23) *Mycalesis mestra* HEWITSON, 1862, figs. 11-12; (24) *Penthema lisarda lisarda* (DOUBLEDAY, 1845), figs. 13-14. C = cornutus; Dd = dorsum in dorsal view; Ddl = dorsum in dorsolateral view; Dl = dorsum in lateral view; Gl = genitalia in lateral view; Gv = gnathos in ventral view; Jd = juxta in dorsal view; Jdl = juxta in dorsolateral view; Jl = juxta in lateral view; Jp = juxta in posterior view; Pd = aedeagus in dorsal view; Pdv = aedeagus in dorsal view with vesica everted; Pl = aedeagus in lateral view; Pv = aedeagus in ventral view; Pvv = aedeagus in ventral view with vesica everted; R = ring in lateral view; UGpl = uncus plus gnathos in posterolateral view; UVd = uncus plus tip of valvae in dorsal view; Vd = valva in dorsal view; Vf = valva-tip in full face view; VJd = valvae plus juxta in dorsal view; VJl = valvae plus juxta in lateral view; VJv = valvae plus juxta in ventral view; Vl = valva(e) in inner lateral view.